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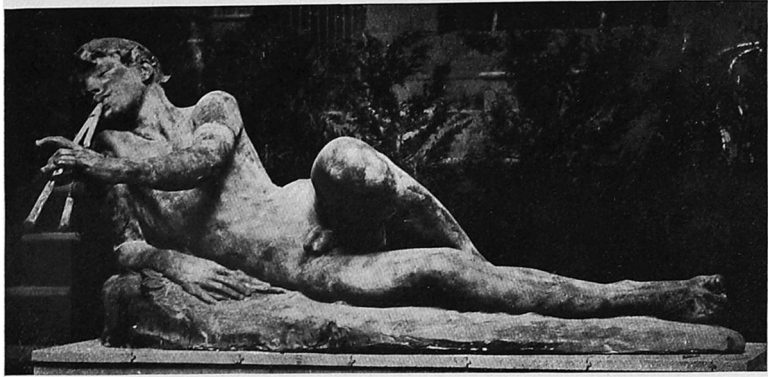
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PASTORAL  
By Carl A. Heber

## HOW THE SCULPTOR'S MODEL IS ENLARGED

The work of producing the colossal statuary for the buildings and grounds of the World's Fair from the sculptor's original model is by modern methods thoroughly systematized and specialized. System and specialization here have certainly come by the same authority as in other economic fields—the conservation of effort and improved result. Statuary for this purpose is now modeled directly in the staff or cement as it appears upon the buildings and grounds of the exposition, whereas, previously to the work of Mr. Bitter, it had been first enlarged in clay, usually by rudimentary methods, after which it had to be molded and cast. The new method is an immense improvement.



GROUP FOR SIDE CASCADE  
By Isidore Konti

To enlarge or copy on a scale from one to six times larger by the method employed by Mr. Bitter, as director of the sculpture work, the model given by the sculptor, to whom the designing of the particular work was intrusted, is placed upon an enlarging or pointing machine. This enlarging or pointing machine is simply a device for giving in exact proportion the different dimensions of the model, point by point, as

desired by the operators of the machine. The device is not intricate, and in its operations will be readily comprehended by the reader.

This pointing or measuring machine is constructed upon simple geometrical principles. The model is placed upon a bracket which



INDIAN TERRITORY  
By Carl A. Heber

can slide vertically upon a revolving post. Upon one side of this post is another revolving post, which is to support the enlarged work, and upon the other side, and in line with the two, is a fixed post carrying a line of dots for the pivot point of the pointing or measuring arm to rest in. This pointing or measuring arm, which shows any two corresponding points upon the surface of the model and of the enlarged figure to be made from it, consists of simply a long, light, but very rigid, metal tube, to which is attached extended at right angles to it



GROUP FOR LIBERAL ARTS BUILDING  
By H. Linder

three tapering points. The points of these extensions are of fine steel, and when ready for work, are exactly in a straight line and of a distance apart according to the distance between the three posts. By regulating these distances any scale of enlargement can be obtained.

This pointer or pointing arm, with the three points, is counter-balanced so as to swing lightly in all directions, the point at one end held against the pivot post, the middle one touching some point upon the model and the third point upon the free end showing the corresponding point upon the enlargement. Provided with this machine the operator, a student, or any practical workman builds up first a strong frame upon the general lines of the figure continually measuring with the pointer to make sure that the frame is within the outlines of the figure which is to be. He proceeds to build up in the same way smaller and smaller portions, carefully keeping within the outlines of the figure until there appears what looks like a wooden skeleton of the statue. Knowing at any moment where the surface at any point is to be the operator can leave a space of quite a uniform thickness (usually about one inch) for the coating of staff and cement used as a finish.

Having a sufficient supporting frame thus made of wood, and

when the construction demands it of iron pipes and rods, the next step is to cover it with some sort of fiber, jute, burlap, or wood excelsior dipped in plaster of Paris. This is what is called "staff." With this "staff" the surfaces can be a little better rounded out and the smaller details better supplied. It is all, yet, built smaller and thinner than the finished statue is to be. Lastly, the operator marks points which it would be desirable to have located to enable a modeler to correctly copy the work upon the model with a pencil, and which he indicates with the pointer, while an assistant marks it upon the surface of the enlargement by driving small nails into the "staff" covering. This completes the first process, and is called "pointing." Previously to Mr. Bitter's work, the model was given at once into the hands of the skilled modeler, who by the laborious methods of measuring then in use constructed with far less exactness, but at a greater cost of time what a comparatively unskilled workman with this device does so readily. This carefully pointed rough plaster or staff figure with



PERE MARQUETTE  
By Cyrus E. Dallin



SHIELD HOLDERS  
By A. A. Weinmann

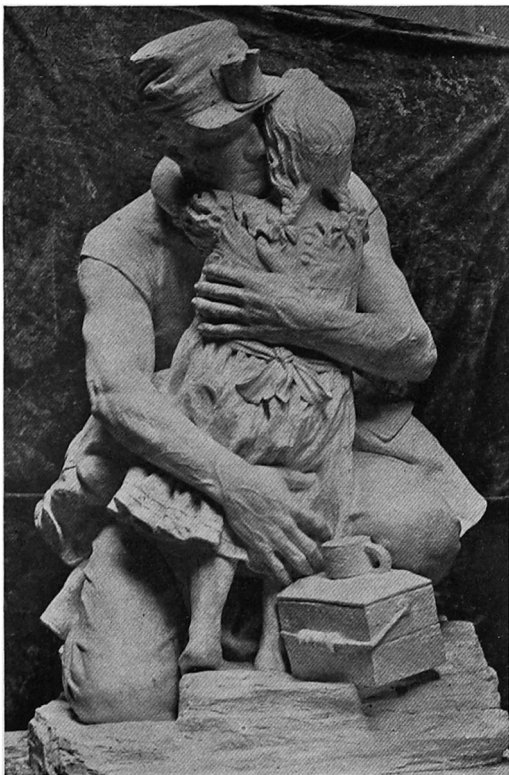
the  
model  
having

the corresponding points marked is now given to the skilled modeler, who can at once apply his artistic ability in finishing the work on the enlarged scale.

In the sculpture work for the St. Louis Fair, Mr. Bitter has introduced for the first time a new modeling cement for finishing the figures. It is, while more convenient to use, more hard and durable when set and dry, and at the same time of a most pleasing light creamy tint.

The entire process of the reproduction in enlarged form of the

sculptor's scale model might thus be dismissed as a mechanical one. But the fact that an evident "sharpening" and improving of the original "working model" is necessary to give the intended effect will probably prevent the process ever becoming more than now a me-



THE MINER  
By Charles J. Mulligan

chanical one. While this "finishing" or interpreting requires, naturally, the efforts of a modeler who masters styles and technique, it is also the testimony of the master sculptor of all times that the reproduction of a work of sculpture in sentiment, in character, and in effect can only be effected by the most mechanically perfect reproduction of all forms and dimensions in true proportion.

Thus, the work of reproducing on proper scale of the sculpture models for the exposition readily resolved itself into two parts: first, "pointing," or the construction of the principal masses of the enlarged figure, and

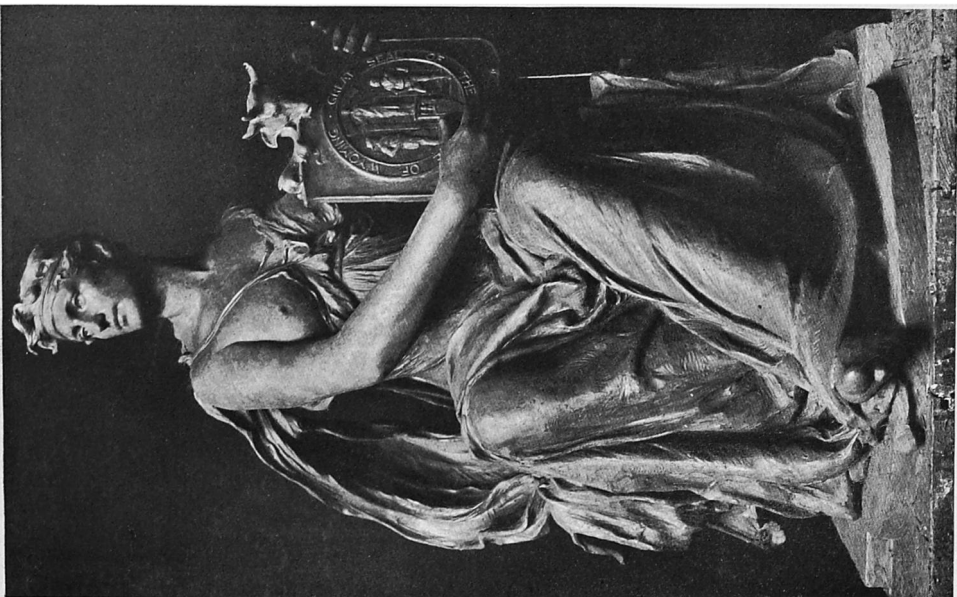
then marking as accurately as possible in true relation and proportion as many of the salient points in the surface as desired as guides to the finishing; second, the "finishing." The first part, "the pointing," is wholly mechanical. The second, the "finishing," bears a relation to the work of the author of the sketch model, similar to that which the conductor of an orchestra does to the work of the composer and must be considered in a general way mechanical. Hitherto, the work of "pointing up," being done by the primitive method of meas-

urements and cross measurements by hand-compasses from point to point, was too elaborate and expensive for the temporary decorations of an exposition. The work was consequently vaguely done, the element of "free hand" entering in too largely. It being so naturally in the field of mechanics, in due time the mechanical measuring or "pointing" machine described above appeared.

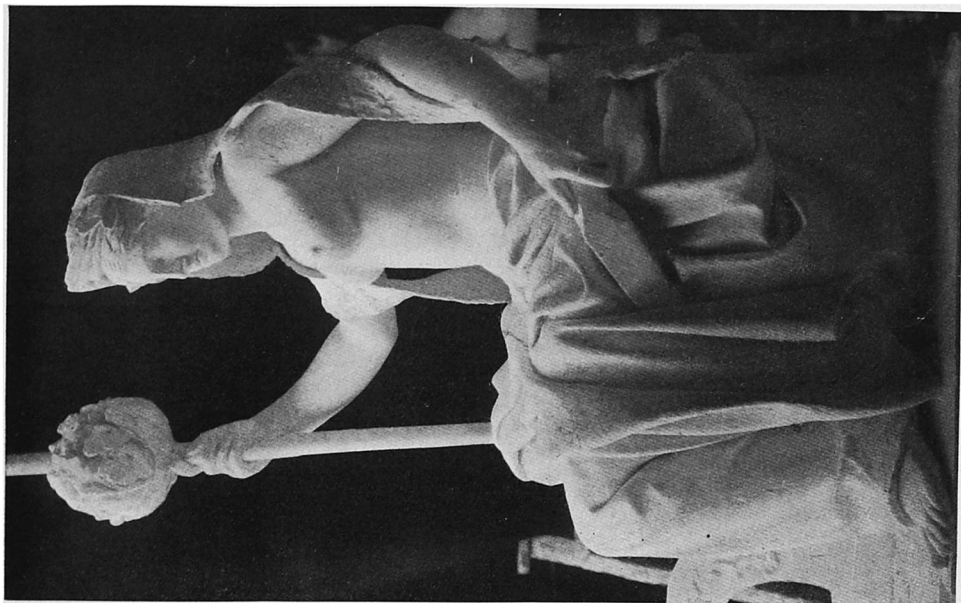
ROBERT T. PAINE.



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By George J. Zolnay



WYOMING  
By C. F. Hamann



OKLAHOMA  
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